Course Unit Descriptor

Study Programme: Bachelor Academic Studies in Biochemistry

Course Unit Title: Molecules significant for medicine

Course Unit Code: IB-604

Name of Lecturer(s): Assistant Professor Jovana Francuz

Type and Level of Studies: Bachelor of Science Degree

Course Status (compulsory/elective): elective

Semester (winter/summer): summer

Language of instruction: English

Mode of course unit delivery (face-to-face/distance learning): Face-to-face

Number of ECTS Allocated: 5

Prerequisites: None

Course Aims:

Acquiring knowledge about molecules of potential medical importance. Introduction to the discovery, obtaining and pharmacological effects of selected biologically active molecules and biomolecules.

Learning Outcomes:

By the end of this course, students will be able to: explain the basic methods of obtaining molecules and biomolecules significant for medicine, as well as to understand their pharmacological effect.

Syllabus:

Theory

Elements and small molecules of medical importance. Discovery of selected biomolecules and their importance: urea, glucose, steroidal compounds, porphyrin hem, vitamin B12 and others. Discovery of the most important antibiotics and other antimicrobial drugs, their synthesis and biological effects: penicillin, erythromycin A, amphotericin B, vancomycin and others. Discovery of the most important medicaments (acetylsalicylic acid, morphine, quinine, avermectin). Antitumour agents: discovery, synthesis and medical significance (paclitaxel). Selected toxins: discovery, synthesis and medical importance (strychnine, palytoxin, brevetoxin, etc.). Discovery and significance of lesser known molecules significant for medicine.

Practice -

Required Reading:

1. J. Francuz: Molecules significant for medicine, internal script (ePMF), 2019.
2. K. C. Nicolaou, T. Montagnon: Molecules that changed the world, WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim, 2008.

Weekly Contact Hours: 60	**Lectures:** 30	**Practical work:**

Teaching Methods:

Lectures, desk study projects, seminar(s)

Knowledge Assessment (maximum of 100 points): 100

Pre-exam obligations	points	**Final exam**	points
Active class participation	10	written exam	70
Practical work		oral exam	

Preliminary exam(s)		…….	
Seminar(s)	20		
The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.			